



A.D. 1810 N° 3313.

S P E C I F I C A T I O N

OF

JOHN JUSTICE.

STOVE GRATES.

L O N D O N :

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Stove Grates.

JUSTICE'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, JOHN JUSTICE, of Dundee, in North Britain, Ironmonger, send greeting.

WHEREAS His present most Excellent Majesty King George the Third, by His Letters Patent under the Great Seal of Great Britain, bearing date at
5 Westminster, the Sixth day of March now last past, did give and grant unto me, the said John Justice, His especial licence, full power, sole privilege and authority, that I, the said John Justice, my executors, administrators, and assigns, by myself and themselves, or by my or their deputy or deputies, servants or agents, or such others as I, the said John Justice, my executors, adminis-
10 trators, or assigns, should at any time agree with, and no others, during the term of years therein mentioned, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick-upon-Tweed, my Invention of “AN IMPROVEMENT IN THE CONSTRUCTION OF STOVE GRATES CALCULATED TO PREVENT OR CURE SMOKEY CHIMNIES, AND POSSESSING OTHER ADVANTAGES
15 OVER THE STOVE GRATES IN COMMON USE;” in which said Letters Patent there is contained a proviso obliging me, the said John Justice, by an instrument in writing under my hand and seal, particularly to describe and ascertain the nature of my said Invention, and in what manner the same is to be performed, and to cause the same to be inrolled in His Majesty’s High Court of Chancery
20 within four calendar months next and immediately after the date of the said Letters Patent, as in and by the same, reference being thereto had, will more fully and at large appear.

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NOW KNOW YE, that in compliance with the said proviso, I, the said John Justice, do hereby declare that the nature of my said Invention is described in manner following, that is to say:—

The stove grates of my improved construction are in appearance similar to the register stoves in common use, but with the following additional conveniences or improvements:—The grate, or that part which contains the fire, instead of being fixed and immoveable in its place between the outside cheeks, as in the stove grates or register stoves in common use, is moveable upwards or downwards between the outside cheeks, so that it may be lowered or sunk down even to the hearth when this is desirable, as where wood or turf is the fuel principally to be employed, or may be raised or wound up to any height desireable, and at the same time suitable to the inside opening of the front; presenting in this power of being moved and placed at any required height the great advantage of enabling the possessor so to adjust it as to cure or altogether prevent that evil so very generally complained of, commonly called a smokey chimney, for in most cases of smokey chimnies the evil, as is well known to mechanics, may be remedied by bringing the top or lintel of the chimney down to some certain distance from the grate, which shall be found to occasion precisely that draught of air which is necessary to carry up the smoke. But the method of remedy just mentioned would often be found to produce such a deformity and want of proportion as would be unbearable in an elegant room, nor would it be easy to adjust without various trials the height of the lintel precisely to produce the effect intended. But though the top or lintel of the chimney cannot always be conveniently altered to produce the effect wanted, the height of the grate may with perfect convenience and without producing any unpleasant appearance to the eye, and this is what I effect and what constitutes the principal improvement in my said improved construction of stove grates. Another improvement consists in giving motion by the same key that makes the grate to ascend or descend, to two or more plates of metal fitted to the width of the front, and when not in use kept out of sight behind the top of the metal front (but those who prefer it may use a distinct key and arrangement for this). These plates of metal answer the purpose of what is commonly called a blower, and are in fact a blower differing in no respect from the blowers in common use, excepting only that by being made in two or more pieces instead of one, but I commonly employ only two; they are made to slide one behind the other, so that the two occupy but half the space when up that the blower would occupy if made of one piece (but if the lintel be broad enough, the blower may be of one plate). This blower, by beginning to descend after the grate in its ascent has reached a certain point, prevents the

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necessity of raising the grate to such an inconvenient height (that is to any height displeasing to the eye,) as would sometimes be otherwise necessary in cases where the cure of a smokey chimney is difficult. From the description already given, any competent workman would be able to construct my
5 improved stove grate; for the methods of raising or lowering at pleasure anything required to be moved by mechanical means may be varied without any inconvenience, according to the fancy of the workman, being in fact infinite in number; so that I do not rest my Invention on the particular methods or mechanical contrivances that may be used to raise or lower the grate and the
10 blower, or either of them, but on the giving an ascending or descending motion to the grate or to the grate and blower. But to enable any workman who hereafter may be employed to construct similar stove grates, I shall describe, as an example, one method of arranging the mechanical parts which I have found in practice to answer very well. A slit should be cut in one of the out-
15 side cheeks, say, in the right-hand outside cheek, to allow a communication between the fire-grate that is to be moved and the apparatus employed to communicate the motion, the said apparatus being placed behind the cheek out of sight (though this is not indispensibly necessary). Having fitted the fire-grate, videlicet, the back and cheeks of the fire-grate to the back and
20 cheeks of the outer framing, a stout bar of sufficient strength to carry the weight of the fire-grate must be made fast to the said fire-grate in such manner and in such form that the said bar may come horizontally or nearly so through the slit before mentioned, and then ascend perpendicularly behind the outer cheek. On that side or face of the ascending part of the said bar which
25 is next to and parallel to the front of the grate, a rack should be cut (or a rack may be attached securely to it). In this rack a pinion or small wheel should work, and on the same axis that carries the said pinion or small wheel should be a wheel a little larger than the said pinion, with its teeth a little inclined to receive motion from a worm, the outer end of the axis of which worm termi-
30 nates in the front of the stove grate, and is squared to receive the key employed to wind up or lower the fire-grate, or the fire-grate and blower when a blower is also attached to the stove grate. When this arrangement is completed, the axis of the worm before mentioned will be horizontal, and at the same time perpendicular to the face of the stove grate, and the axis of the wheel and
35 pinion before mentioned will also be horizontal but parallel to the aforesaid face of the stove grate. As the grate is raised or lowered by motion communicated, as has just been described, to an ascending or perpendicular bar attached to it, so the blower is also lowered or raised by motion communicated to a bar connected with it by an elbow through a slit in the cheek, but this last-men-

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tioned bar descends perpendicularly instead of ascending like the one attached to the fire grate. This descending bar on the side farthest from but parallel to the front of the stove grate has a rack which falls on that side of the pinion before named, which is opposite to the part working in the rack of the ascending bar before mentioned, that is, one pinion or small wheel works into the racks of both, and of course when the descending bar is in action the motion of the two racked perpendicular bars are opposite and contrary, the one ascending while the other is descending. But the descending bar is not furnished with a rack throughout its whole length, but only so much of it is so furnished as the length of space through which the plates of the blower are to descend. The said descending perpendicular bar is made fast only to one of the plates of the blower, namely, that one which is to descend lowest; the other plate descends by its own weight, and is furnished with two or more pins which, coming against stops placed at a suitable height, prevents its descending lower and keeps it stationary, while the other attached to the descending bar continues to descend by the motion communicated by the rack, till by its descent and the ascension of the grate, the two, videlicet the blower and the grate, are brought close together (if need be), so that when in this position no air can enter the chimney without passing through the fire. When the blower is wound up it will be seen, from the foregoing description, that the ascending bar carries up the lower plate only of the blower, but the lower plate is furnished with two or more pins which in its ascent come against stops in the upper plate, by which means the upper plate is also carried up, and both get out of sight behind the top or lintel of the front of the stove. It is only necessary further to state that the descending perpendicular bar is kept suspended when not in action (which it is convenient should be the case during some part of the rising of the fire grate) by means of a lever, the pin or fulcrum of which is fastened to the outside or back of the outer cheek. One end of this lever meets a pin projecting from the descending bar, while the other end is loaded with a counterpoise able to sustain the weight of the descending perpendicular bar and the blower. This lever is placed in such a position that the loaded end passes over the horizontal arm by which the ascending bar is attached to the fire-grate, so that when the fire-grate is down near the hearth the lever is in action, keeping the descending bar at such a height that the rack on the said bar is disengaged from the pinion, but when the fire-grate is wound up to a certain height (by turning the key) the horizontal arm of the ascending bar before mentioned reaches the loaded end of the lever, and in its ascent lifts up the said loaded end, suffers the descending bar to descend, and thus brings its rack into action with the pinion. A small bolt may be introduced to carry the weight of the

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blower and its descending bar, by moving which bolt the fire-grate alone, when this may be desirable, may be made to rise or fall without the blower being brought into action. I have said nothing of fixtures or supports in describing the before-mentioned apparatus, because they are precisely similar
 5 to what would be employed in any other machinery to connect and support parts similar to those which I have described as exemplifying the means that may be used to give an ascending or descending motion to the fire-grate or fire-grate and blower of my improved stove grate, which improved stove grate I mean to distinguish on account of its property of suffering the fire-grate to be
 10 raised and lowered by the name of the Patent Metastatic Stove Grate.

In witness whereof, I, the said John Justice, have hereunto set my hand and seal, the Nineteenth day of June, in the year of our Lord One thousand eight hundred and ten.

JOHN JUSTICE. (L.S.)

15 Sealed and delivered in the presence of

DAV^D BROWN,
 of Dundee,
 Merchant.

Dav^d Brown, of Dundee, Merchant, maketh oath and saith, that he was
 20 present, did see John Justice, in the annexed deed poll or Specification named and described, sign, seal, and as his act and deed in due form of law deliver deed the said annexed poll or Specification ; and saith that the names or characters " John Justice " set and subscribed opposite the seal affixed to the said annexed deed poll or Specification as the party executing the same, and
 25 " Dav^d Brown," thereto also set and subscribed as the witness attesting the due execution thereof by the said John Justice, are of the respective proper hands writing of the said John Justice and this deponent.

DAV^D BROWN, Witness.

Sworn at Dundee, this 19th day of June 1810,
 30 before me, Chief Magistrate of the Burgh of
 Dundee,

ALEX. RIDDOCK.

Inrolled the Second day of July, in the year above written.

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